Chapter 11: Recommended Strategies and Policies for Economic Sustainability

The research and analysis for the Economic Sustainability Plan resulted in a number of findings and identified many important issues. The key findings are summarized in the previous chapter, and this chapter discusses four cross-cutting issues that are important to all three of the main economic sectors dependent on Delta resources: agriculture, recreation and tourism, and infrastructure services. The first critical issue deals with the future of the Delta levee system, the critical infrastructure that supports the Delta economy and numerous state interests in the Delta. The second issue is the importance of water quality and quantity to the Delta economy. The third issue concerns the current status and future of agriculture, recreation, and tourism as important economic drivers in the Delta, and their role in defining and enhancing the Delta as a unique place. The fourth issue is the opportunities and challenges facing the Delta's historic Legacy Communities, and how they illustrate the strategies and recommendations.

Although the focus of this plan is the Delta, it is also a part of on-going statewide planning initiatives related to the broader state's interests in the Delta's water resources and ecosystem. The plan recommends many specific actions where the state's coequal goals of water supply reliability and ecosystem restoration are consistent with the requirement to restore and enhance the Delta. However, a small number of the water supply and ecosystem proposals create large conflicts with economic sustainability and are not recommended in the plan.

Four Key Issues

1. The Delta Levee System

Since the early 20th century, the current-day Delta levee system provides flood control that allows productive agricultural and urban uses of land, channels water for urban and agricultural uses, protects critical infrastructure, and creates a desirable setting for boating and water-based recreation in an environment unique in California. The levee system is the foundation on which the entire Delta economy is built. Therefore, a sustainable Delta economy requires a sustainable levee system.

To support the Economic Sustainability Plan, an up-to-date map of Delta levees was created. This map serves as the basis for an updated tabulation of levee lengths, which shows that in the Legal Delta, there are just under 1,000 miles of levees, of which 380 miles are project levees constructed by the U.S. Army Corps of Engineers (USACE), and an additional 63 miles are urban non-project levees, as defined by recent State legislation. Subtracting from the total the urban levees and levees in the north and south Delta that are primarily flood-control levees leaves around 650 miles of core levees, which protect lands below sea level in the Primary Zone of the Delta. Of these core levees, 193 miles are project levees that are primarily located along the Sacramento River. The remaining approximately 460 miles of core levees need to be maintained and enhanced by the State and the local reclamation districts.

Of this 460 miles of levees, only about 50 miles clearly fall below FEMA's Hazard Mitigation Plan (HMP) "standard" and 100 miles or more are already at or about the Corps of Engineers Delta-specific PL 84-99 standard. It has been the goal of the State and federal governments, working through the Department of Water Resources (DWR), the U.S. Army Corps of Engineers (USACE), and the local reclamation districts, to meet the PL 84-99 standard since 1982 when DWR and USACE produced a joint report on the Delta levees which recommended the basis for this standard. If effectively used, funds currently in the pipeline should bring the Delta levees

close to achieving this goal. When these funds have been expended, more than $698 million will have been invested in improvements to the Delta levees since 1973. These improvements have created significantly improved Delta levees through modern engineering and construction, making obsolete the historic data that is still sometimes used for planning or predicting rates of levee failure.

Three approaches can help all jurisdictions and planners further reduce the risks resulting from the failure of the Delta levees. These approaches are: (1) build even more robust levees, (2) improve both regular maintenance and monitoring and flood-fighting and emergency response following earthquakes, and (3) improve preparedness for dealing with failures after they occur. With regard to the first approach, the big question with respect to the core Delta levees is not whether they should be improved to the Delta-specific PL 84-99 standard. Instead, the key question is whether in order to support and enhance various in-Delta, regional, State and federal interests they should be improved to a higher standard in order to address hazards posed by not only floods, but also earthquakes and sea-level rise. Our conclusion is that these improvements would be advantageous not only for flood control and protection against earthquakes and sea-level rise, but because they also would allow for planting vegetation on the water side of the levees—an essential component of Delta ecosystem repair. These further-improved levees would have wider crowns to provide for two-way traffic and could easily be further widened at selected locations to allow the construction of new tourist and recreational facilities out of the statutory floodplain. Improvement of core levees to this higher standard would cost in the order of $1 to 2 billion, a significant sum but much less costly than other estimates. Chapter 4 contains further detail regarding funding sources, the assessment of Delta levees, and evaluation of strategies.

2. Delta Water Quality and Supply

Water quality and quantity is essential to the three key components of the Delta economy: agriculture, recreation, and infrastructure services. As discussed in Chapter 6, the impact of increased salinity on Delta agriculture is already apparent in many areas, and further deterioration would have very large costs. Surveys of Delta boaters have identified water quality as being the most important area of improvement to increase the quality of Delta recreation. Similarly, lower water quality increases costs for municipal and industrial water supplies in the Delta, and creates a financial burden for Delta households and businesses. Much like levees, adequate water quality and quantity is a necessary foundation for a sustainable Delta economy.

Water quality and quantity is the largest impact of many of the proposed changes to the Delta. Proposed changes in conveyance that might lower water quality, particularly in the South Delta, could have adverse impacts on all parts of the Delta economy. Conversely, there would be positive effects if state agencies were to require greater “environmental flows” in the San Joaquin River, Sacramento River, and through the Delta as a whole. Likewise, tighter controls on both urban and agricultural waste water will have positive effects.

In addition to water quality, the Delta economy depends on the availability and right to use sufficient quantities of water. In-Delta use of water is small compared to upstream diversions and water exports from the state and federal projects in the south Delta, and unlike these other diversions, in-Delta water use has not increased in recent decades. Thus, protection of adequate fresh water flows and in-Delta water rights is critically important to economic sustainability.

3. The Present and Future Contribution of Agriculture, Recreation, and Tourism

Agriculture is the main economic driver in the Delta, generating five to six times the regional economic impact of recreation and tourism. However, recreation and tourism has the most growth potential. Research for this plan found that a dollar of crop production in the Delta has nearly double the regional employment and income impacts of a dollar of recreation and tourism spending in the Delta. This result is important for economic sustainability since many proposals to change the Delta would reduce agricultural production while potentially increasing recreation and tourism. Even using the weakest definitions of economic sustainability that would allow growth in one sector to offset decline another, the projected growth in Delta recreation spending over the next 40 years would only be equivalent of 5 percent of the current economic impact of Delta agriculture on the five Delta counties. Thus, economic sustainability requires the value of Delta agriculture to be sustained and enhanced in the future.

The lower economic impact of recreation and tourism spending is because fuel and retail purchases dominate expenditures for the types of recreation and tourism that are currently available in the Delta. Although these are local expenditures, the goods are typically produced elsewhere have relatively low multiplier effects on the regional economy. While recreation trips to the Delta are a significant contributor to the Delta economy and are expected to increase, increasing the economic impact of tourism spending requires increasing spending per trip to the Delta and the local economic impact of spending that does occur. This requires diversification through new investment in high value-added, land-based tourist services that generate more local income and jobs than retail and fuel expenditures. A successful strategy would require significant new investment in hospitality enterprises within the Delta, and also stimulate investments needed to sustain and enhance the large existing economy associated with Delta boating. This is a difficult challenge given the market and regulatory constraints of operating in the Delta.

This plan offers some tactics to support this strategy, but it is important to have realistic expectations of the growth potential. In the baseline scenario, recreation and tourism spending is projected to grow about $80 million, 30 percent over the next 40 years. Successful efforts to expand and enhance tourism and recreation experiences could consequently increase this by another $30 million. However, increasing day trips for wildlife viewing and other ecologically-based activities is unlikely to generate significant increases to in-Delta economic activity, especially without new investment in services that encourage longer visits and overnight stays.

On the agricultural side, supporting the high-value processing tomato and wine grape crops is critically important to the regional economy because of the local value-added manufacturing industries associated with these crops, and the potential for significant growth in local winery capacity and direct sale of product. The baseline projection developed for this plan predicts that an additional 10 percent of Delta agricultural land will shift towards these higher-value crops over the next few decades, creating a significant boost to the regional economy. However, these crops are generally considered to be less wildlife friendly, and significant expansion could conflict with ecological restoration goals in the Delta.

4. Sustainable Legacy Communities: Where the Challenges and Strategies Come Together

Economic opportunities and constraints facing the Delta's Legacy Communities mirror those in the broader Primary Zone. The current economies of the Legacy Communities are agriculturally based providing support services and limited workforce housing for the Primary Zone's largest

industry as well as some housing for retirees and service and professional workers who commute into nearby urban areas such as Sacramento. Despite the current base in agriculture and rural bedroom and retirement communities, much of the revitalization strategies for Legacy Communities are based on growing their appeal as destinations for recreation and tourism. This includes promoting the emerging agritourism sector—including wine and local foods—as an economic development theme.

However, a strict and multi-layered regulatory framework places limits on economic development opportunities within the Delta's Legacy Communities. The aging and occasionally sub-standard building stock needs improvement, potentially utilizing redevelopment of existing buildings and/or a limited amount of new development in order to accommodate visitor- and local-serving enterprises. New investment is especially important because the existing base of hospitality- and tourism-related enterprises is very limited and insufficient to attract and capture significant tourist activity. The most developed recreation and tourism enterprises in the Delta are campgrounds and marinas that serve water-based recreation; these are mostly located outside the Legacy Communities and often outside the Primary Zone.

An already burdensome regulatory environment has been made significantly worse by the recent remapping of FEMA flood zones. All of the Legacy Communities along the Sacramento River have either been or are in the final process of being remapped into the 100-year floodplain. This designation requires elevation of new and substantially remodeled existing structures 10 feet or more above ground level, making most new construction, additions and major renovations financially infeasible. Many stakeholders are concerned that the flood zone designation will cause the Legacy Communities to slowly wither away. It is clear that the economic sustainability of the Legacy Communities is dependent on levee and flood-control investments as well as other strategies to address the constraints of flood zone designation.

Despite these challenges, the Legacy Communities have significant historical, cultural, and economic values and the potential to become attractive destinations for visitors and more prosperous, higher quality of life for residents. Chapter 11 includes more detailed visions and strategies for Legacy Communities, including case studies of Walnut Grove, Locke, and Clarksburg.

Recommended Actions for Economic Sustainability

The following actions are recommended. All of these actions and strategies are consistent with economic sustainability in the Delta and the coequal goals of increased water supply reliability and ecological restoration.

- **Improve core, non-project Delta levees to the PL 84-99 standard by 2015 using the existing Delta levee subventions and special project programs.** This engineering standard has been developed and supported by numerous studies, is attainable with current bond funds, and consistent with the intended use of the bonds California voters passed in 2006. Achieving this goal will increase water supply reliability, and will leverage the substantial benefit of federal support from the Army Corps of Engineers in the event of future levee failures. (Chapter 4)
- **Improve many Delta Levees beyond the PL 84-99 that addresses earthquake and sea-level rise risks, improve flood fighting and emergency response, and allow for vegetation on the water side of levees to improve habitat.** Upgrades beyond PL 84-99 are the appropriate place to consider implementing island-by-island life-cycle cost-

benefit analyses. Improvement of most core Delta levees to this higher standard would cost $1 to $2 billion. While this is a longer-term program, planning should be initiated immediately. (Chapter 4)

- **Transfer responsibility for coordination of regional emergency management and response and recovery to a regional agency.** The regional agency should place much more emphasis on preventative maintenance and inspections, flood-fighting, and emergency response. The Delta Protection Commission should consider taking on this role.
- **Maintain or enhance the value of Delta agriculture.** The contribution of agriculture to the economy of the Primary Zone is irreplaceable, and it is also very important to the Secondary Zone and regional economy. While some modest loss in agricultural acreage may be unavoidable, it is possible to maintain and enhance the value of Delta agriculture if current trends towards higher value crops continue. The requirement to protect the value of Delta agriculture must be part of any habitat, water supply or development plans. The fifth draft of the Delta Plan under development by the Delta Stewardship Council includes maintaining and enhancing Delta agricultural revenues as a performance measure.
- **Initiate a process to streamline local, State, and federal regulations and permitting.** Overlapping layers of regulatory oversight in the Delta create uncertainty and costs that discourage private investment needed for economic sustainability.
- **The Delta Stewardship Council should not increase regulation of "covered actions" for industries it is trying to enhance in the Delta.** Exemptions should be made for needed investments in agriculture, recreation, and tourism.
- **An existing agency should be designated to manage and implement economic sustainability efforts in the Delta.** The agency would ensure that strategic actions, such as marketing efforts and recreation enhancements, are implemented in a systematic, efficient, and consistent fashion throughout the Delta. The Delta Protection Commission should consider taking on this role.
- **Create a Delta and/or Legacy Communities "brand" to enhance awareness.** The agricultural products, attractions, and communities of the Delta should be marketed strategically in order to raise the stature of the region and encourage added visitation.
- **Designate the Delta as a National Heritage Area (NHA).** This recommendation is contingent on the outcome of the Delta Protection Commission feasibility study. The NHA could be an effective tool for marketing and branding the Delta and implementing the recreation and tourism enhancement strategy.
- **The Delta Investment Fund should be established and used strategically to implement the recreation and tourism enhancement strategies.** Funding for planning and development of focal point complex areas and catalyst features, especially those close to Legacy Communities, should be a high priority.
- **Develop measurable targets for recreation and tourism and agricultural sustainability, and track performance over time.** A key first step is to improve data on recreation and tourism use with an updated visitor survey and additional primary data collection that is repeated at five-year intervals. This data is crucial for future recreation planning and marketing. Agricultural data is more available but needs to be consistently collected and compiled over time.
- **Create flood bypass and habitat improvements in the Yolo bypass, McCormack-Williamson Tract, and the lower San Joaquin River near Paradise Cut.** In all cases, the BDCP and State interests should work collaboratively with local stakeholders to minimize negative economic impacts and develop effective mitigation. In the lower San Joaquin River, an alternative proposal developed collaboratively with local stakeholders

is recommended as an alternative to the more expansive and costly plan outlined in the draft Bay Delta Conservation Plan (BDCP). These ecological and flood-control investments should be designed with appropriate facilities to enhance recreational opportunities.

- **Improve water quality and freshwater outflow in the Delta.** In addition to ecosystem benefits, this goal improves agriculture, recreational boating and fishing, and in-Delta municipal and industrial water supplies.

The following proposed actions to further the coequal goals are not recommended because they conflict significantly with economic sustainability. These proposed actions all had significant negative impacts on all three key components the Delta economy evaluated in the plan: agriculture, recreation and tourism, and infrastructure services.

- **A 15,000 cubic feet per second isolated water conveyance facility is inconsistent with economic sustainability**. This project would have significant negative effects on all aspects of the Delta economy. There are unacceptably high risks surrounding the financial feasibility, environmental impacts, and operations of the project. There are many alternative options for increasing water supply reliability, and the large cost of isolated conveyance could drain resources that could support the state policy of reducing reliance on water exports from the Delta.
- **Tidal marsh in the south Delta is inconsistent with economic sustainability.** Tidal marsh in the south Delta eliminates a large amount of high-value agricultural land and would affect water quality in ways that are negative for recreational, municipal, industrial, and agricultural uses.
- **A large area of open water in the Central Delta caused by the permanent flooding of several contiguous islands is inconsistent with economic sustainability.** Although the agricultural value of these deeply subsided islands does not justify levee investments, this strategy would cause significant harm to recreation, and negatively affect water quality for in-Delta municipal and industrial uses through increased levels of organic carbon, and increase flood risks on adjacent islands.

Finally, the plan discusses a number of additional potential actions that require further study and development. These are mostly medium-term strategies that could be consistent with Delta economic sustainability and the coequal goals. However, there are significant concerns or uncertainties regarding their impact on the Delta economy that must be further researched and addressed before they can be recommended in the plan. These potential actions include proposals for smaller capacity water conveyance such as a 3,000 cfs tunnel, moving water supply intakes for conveyance downstream into the west Delta, proposals for enhanced through-Delta conveyance such as Delta corridors, extensive use of wildlife-friendly agricultural easements as described in the BDCP, tidal marsh in the west Delta and Cache Slough, and subsidence-reversal and carbon-sequestration agriculture on private lands.

In conclusion, the recommended strategies in the Economic Sustainability Plan show that it is possible to sustain and enhance the Delta economy while making significant progress towards the coequal goals of increased water supply reliability and ecosystem restoration. Compared to plans centered on large, isolated conveyance like the draft BDCP, implementing the strategies in the Economic Sustainability Plan is less costly for the state and the customers of water agencies, and delivers more immediate progress towards the coequal goals.